

**Draft Engineering Evaluation
Frank L. Burrell 1937 Trust
Plant # 24299
Application Number 29647**

On behalf of Frank L. Burrell 1937 Trust, EnviroAssets has applied for an Authority to Construct for a Sub Slab Depressurization (SSD) system at 1422 Big Basin Way in Saratog, Ca. This SSD system consists of a centrifugal fan with a maximum capacity 150 scfm. Soil vapor will be extracted with vapor abatement achieved by two 200-lb carbon beds in series. Emission monitoring for operation of the equipment will be conducted according to established Source Test methodology. Procedures are outlined in the conditions

The applicant will be conditioned to provide written notification at the start of the operation. Procedures are outlined in the conditions found below. The Carbon unit influent and effluent VOC concentrations will be monitored with a portable photo-ionization detector on a schedule reflecting current loading rates and predicted Carbon capacity. Monitoring schedule changes will be allowed only after District review of concentration measurements and subsequent receipt of District approval.

This source is located within 1,000 feet of the outer boundary of Saratoga Elementary School and within ¼ mile of Kumon Math and Reading Center of Saratoga and as such this application requires Public Notification via Reg. 2-1-412. A Public Notice will be prepared and sent out to the home address of the students of the schools and to each address within a radius of 1,000 feet of the source. This Evaluation Report will be posted on the District Webpage along with the Public Notice. A phone line will be set-up at the District to receive public comments.

Emission Calculations

For a conservative estimate of yearly emissions, we shall assume that the system is operated for an entire year within an inlet concentration corresponding to the initial soil concentration level. Generalized assumptions follow:

- * Operating conditions: Pressure = 1 Atm; Inlet Temperature = 21°C; 1 mole occupies 24.15L
- * Influent values based on operational parameters of equipment: influent rate = 150 scfm maximum); abatement efficiency 90% for PCE and TCE, 0% for vinyl chloride

	Influent vapor concentration [µg/m³]	Influent vapor concentration ² [ppmv]	Unabated Emission [lb/day]	Abated Emission [lb/day]	Abated Emission [lb/yr]
Perchloroethylene (PCE)	8117.6	1.18	0.109	0.011	3.986
Trichloroethylene (TCE)	122.6	0.02	0.002	0.000	0.060
Vinyl Chloride ⁵	71.6	0.03	0.001	0.001	0.352

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Cumulative Increase- tons/yr

	<i>Current</i>	<i>Total</i>
<i>NPOCs</i>	<i>0.00 tpy</i>	<i>0.002 tpy</i>

Toxics

Based on the pilot test data, abated emissions of the various compounds do not exceed the toxic trigger level per Table 2-5-1. The facility has accepted the following emission limits on its permit:

PCE	14.0 #/yr
TCE	41.0 #/yr
Vinyl chloride	1.1 #/yr

Emissions of all toxic compounds are below the levels in Table 2-5-1. This project is exempt from Regulation 2-5, pursuant to the low emissions provisions of Section 2-5-110

New Source Review

This proposed project will not emit over 10 lbs per highest day and is therefore not required to implement BACT; however, it is achieved in practice. The owner/operator will be required by permit condition to replace the upstream carbon bed when the outlet POC concentration exceed 1.0 ppmv.

Offsets

Offsets are not applicable for this application, as emissions do not exceed 10 tons/yr. Facility not subject to Reg 2-2-302.

CEQA

The project is considered to be ministerial under the Districts proposed CEQA Regulation 2-1-311 and therefore is not subject to CEQA review. The engineering review for this project requires only the application of standard permit conditions and standard emission factors and therefore is not discretionary as defined by CEQA. This project is in compliance with Chapter 9.2 of the permit handbook.

Compliance

Based on the information submitted, this operation is expected to be in compliance with Regulation 8-47-301, Emission Control Requirements, Specific compounds, and 8-47-302, Organic compounds. The POC emissions will be vented through a Carbon adsorption system at all times of operation.

This project is within 1,000 ft from the nearest public school and is therefore subject to the public notification requirements of Regulation 2-1-412. A 30-day public comment must be held before a final decision can be made on this project.

PSD, NSPS, and NESHAPS are not triggered.

Recommendation

The District has reviewed the material contained in the permit application for the proposed project and has made a preliminary determination that the project is expected to comply with all applicable requirements of District, state, and federal air quality-related regulations. The preliminary recommendation is to issue an Authority to Construct for the equipment listed below. However, the proposed source will be located within 1000 feet of a school, which triggers the public notification requirements of District Regulation 2-1-412. After the comments are received and reviewed, the District will make a final determination on the permit.

I recommend that the District initiate a public notice and consider any comments received prior to taking any final action on issuance of an Authority to Construct for the following source:

S-1: Soil Vapor Extraction System consisting of a 150 max scfm vacuum blower, and ancillary equipment, abated by A-1, SSD Abatement System, consisting of a minimum of two 200 lb capacity Carbon Adsorption Vessels arranged in series

Subject to the following condition #26926:

1. The owner/operator shall abate the Precursor Organic Compound (POC) emissions from Source S-1 by A-1 SSD Abatement System, two (200 lb minimum capacity) Activated Carbon Vessels arranged in series, during all periods of operation. Influent vapor flow shall not exceed 150 scfm. In no event shall emissions to the atmosphere from S1 exceed the following amounts in any consecutive 12-month period: 14.0 pounds of perchloroethylene (perc), 41 pounds of trichloroethylene (TCE) or 1.1 pounds of vinyl chloride [Basis: Regulation 2-5-110]
2. The owner/operator of this source shall monitor with a photo-ionization detector (PID) or other method approved in writing by the District's Source Test Manager at the inlet to the last carbon vessel in series.

[Basis: Cumulative Increase, Regulation 2-5, TBACT]
3. The owner/operator shall record these monitor readings in a monitoring log at the time they are taken. The owner/operator shall use the monitoring results to estimate the frequency of carbon change-out necessary to maintain compliance with conditions number 4 and 5. Monitoring shall be conducted on a daily basis for the first week of operation. After demonstrating continuous compliance for the first week, the owner/operator may switch to monitoring to a weekly schedule. The owner/operator of this source may also propose for District review, based on actual measurements taken at the site during operation of the source, that the monitoring schedule be changed based on the decline in organic emissions and/or the demonstrated breakthrough rates of the carbon vessels. Written approval by the District's Engineering Division must be received by the owner/operator prior to a change to the monitoring schedule. [Basis: Cumulative Increase, Regulation 2-5, TBACT]
4. Upon detection at the outlet of the first carbon vessel of 1.0 ppmv, the owner/operator shall immediately rotate vessels. The first vessel shall be removed from service and replaced by the existing second vessel and a new second carbon vessel with unspent Carbon installed. [Basis: Cumulative Increase, Regulation 2-5, TBACT]
5. The owner/operator of this source shall maintain the following records for each month of operation of the source:
 - a. The hours and times of operation.
 - b. Each monitor reading or analysis result for the day of operation they are taken.
 - c. The number of carbon beds removed from service.

All measurements, records and data required to be maintained by the owner/operator shall be retained and made available for inspection by the District for at least two years following the date the data is recorded.

[basis: Regulation 1-523]

6. The owner/operate shall report any non-compliance of these conditions to Compliance & Enforcement Division at the time that it is discovered. The owner/operator shall detail the corrective action taken and include the data showing the exceedance as well as the time of occurrence in the submittal.

[Basis: Cumulative Increase, Regulation 2-5, TBACT]

7. Upon final completion of the remediation project, the operator of Source S-1 shall notify the Engineering Division within two weeks of decommissioning the operation. [Basis: Cumulative Increase, Regulation 2-5, TBACT]

by _____
Scott Owen, P.E. Supervising Air Quality Engineer

March 8, 2019